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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,078	04/10/2001	Ajit Chowdhury	780202.90075	8745

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EXAMINER	
LISH, PETER J	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/832,078	CHOWDHURY ET AL.	
	Examiner	Art Unit	
	Peter J Lish	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-13,15-19 and 21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-13,15-19 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 8/9/04 have been fully considered but they are not persuasive. While it is true that Stanforth specifically teaches the use of ferrous iron additives, it would be incorrect to say that Stanforth teaches against the use of ferric iron additives. Rather, it is seen from Table 4 that Stanforth uses a ferric iron additive and achieves reduction in the level of iron bioavailability (by the PBET test) similar to those achieved by the instantly claimed invention. Stanforth achieves a lead concentration (mg/L) of 6.2 from a soil with a starting lead concentration of 18.2. The applicants, even after incubating for one day at 35 °C, obtain a lead concentration (mg/L) of 7.1 from a soil with a starting lead concentration of 16. Although Stanforth specifically teaches a process which achieves better results than that using the ferric iron additives, he nonetheless teaches a beneficial reduction in lead bioavailability using ferric iron additives.

Applicants additionally argue with respect to the combination of Stanforth and Pisani that Pisani teaches only a process for reducing the lead permeability and leachability but not one that reduces the lead bioavailability. However, it is taught by Stanforth that the bioavailability is closely related to both the lead solubility and the lead leachability. Therefore, because the properties are closely related, it is expected that a process which lowers the lead permeability and leachability will also lower the lead bioavailability. Furthermore, it is taught that the same reactions take place in the processes of Stanforth and Pisani and therefore would have been obvious to perform additional treatments that further aid the reaction, such as the curing step of Pisani, in the process of Stanforth.

Applicants additionally argue with respect to the combination of Stanforth and Ruby that Ruby teaches the testing of soil treated by specific processes, which differ slightly from that of Stanforth, for bioavailability. However, as admitted by the applicant and additionally taught by Stanforth, the tests of Ruby are the best known tests for determining lead bioavailabilty and the effectiveness of those processes which aim to reduce it. It therefore would have been obvious to perform the tests of Ruby, which require incubation, on the soils treated by the method of Stanforth.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9, 11-13, 15-19, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanforth '133 in view of Pisani '773.

Stanforth '133 teaches that the availability of lead may be reduced by the formation of lead chloropyromorphite by the reaction with a phosphate, such as TSP, and a chloride under acidic conditions. Treatment using a combination of phosphate and chloride under acid conditions, a pH of less than 5, results in a reduced solubility for lead. However, unacceptable amounts of lead can still be available. In order to enhance the P/Cl treatment, the introduction of an iron ion into the soil will further reduce the availability of lead. Table 2 teaches the treatment of soil with the ferrous ion in addition to the chloride and phosphate ions under acidic conditions. The additives may be added in any form to the soil and water is subsequently added.

While it is true that Stanforth specifically teaches the use of ferrous iron additives, it is seen from Table 4 that Stanforth uses a ferric iron additive and achieves reduction in the level of iron bioavailability (by the PBET test) similar to those achieved by the instantly claimed invention. Stanforth achieves a lead concentration (mg/L) of 6.2 from a soil with a starting lead concentration of 18.2. Although Stanforth specifically teaches a process using ferrous iron, which achieves better results than that using ferric iron additives, he nonetheless teaches a beneficial reduction in lead bioavailability using ferric iron additives.

Stanforth additionally teaches subsequent treatment of the soil with an acidic neutralizing compound, which include alkalis in the form of calcium carbonate, calcium hydroxide, calcium oxide, magnesium hydroxide, or magnesium oxide. This neutralization by alkali compounds further reduces the availability of the lead.

Stanforth teaches treatment of roadside soils. Thus, the recited temperatures in the claims for treatment with the various additives are encompassed by outdoor temperatures, which can generally range up to 50 °C. Column 5, lines 39-40, teaches adding the phosphate additive in the amount of 1 to 10% by weight of the soil. Table 1 teaches adding 0.3% chloride additive relative to the soil. Column 5, lines 10-15 teach adding 0.25-5% Fe compound relative to the soil. Column 5, lines 62 - column 6, line 1 teach adding the alkali compound in the amount of 0.5% to 10% by weight. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, in re Malagari, 182 USPQ 549.

Stanforth '133 does not specifically teach "incubating" the soil after adding the various additives. However, Pisani '773, in a similar process where TSP, along with other additives, is added to outdoor soil to reduce the availability of heavy metals, the soil is cured or "incubated" for seven days (see column 6, line 29). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to cure or incubate the treated soil of Stanforth '133 because Pisani '773 teaches the use of an incubation period when treating lead contaminated soil with TSP, which is known to react with lead to form pyromorphite in a reaction equivalent to that relied upon by Stanforth.

Claims 1-9, 11-13, 15-19, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanforth '133 in view of Ruby et al. ("Advances in Evaluating the Oral Bioavailability of Inorganics in Soil...").

Stanforth '133 teaches that the availability of lead may be reduced by the formation of lead chloropyromorphite by the reaction with a phosphate, such as TSP, and a chloride under acidic conditions. Treatment using a combination of phosphate and chloride under acid conditions, a pH of less than 5, results in a reduced solubility for lead. However, unacceptable amounts of lead can still be available. In order to enhance the P/Cl treatment, the introduction of an iron ion into the soil will further reduce the availability of lead. Table 2 teaches the treatment of soil with the ferrous ion in addition to the chloride and phosphate ions under acidic conditions. The additives may be added in any form to the soil and water is subsequently added.

While it is true that Stanforth specifically teaches the use of ferrous iron additives, it is seen from Table 4 that Stanforth uses a ferric iron additive and achieves reduction in the level of

iron bioavailability (by the PBET test) similar to those achieved by the instantly claimed invention. Stanforth achieves a lead concentration (mg/L) of 6.2 from a soil with a starting lead concentration of 18.2. Although Stanforth specifically teaches a process using ferrous iron, which achieves better results than that using ferric iron additives, he nonetheless teaches a beneficial reduction in lead bioavailability using ferric iron additives.

Stanforth additionally teaches subsequent treatment of the soil with an acidic neutralizing compound, which include alkalis in the form of calcium carbonate, calcium hydroxide, calcium oxide, magnesium hydroxide, or magnesium oxide. This neutralization by alkali compounds further reduces the availability of the lead.

Stanforth teaches treatment of roadside soils. Thus, the recited temperatures in the claims for treatment with the various additives are encompassed by outdoor temperatures, which can generally range up to 50 °C. Column 5, lines 39-40, teaches adding the phosphate additive in the amount of 1 to 10% by weight of the soil. Table 1 teaches adding 0.3% chloride additive relative to the soil. Column 5, lines 10-15 teach adding 0.25-5% Fe compound relative to the soil. Column 5, lines 62 - column 6, line 1 teach adding the alkali compound in the amount of 0.5% to 10% by weight. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, in re Malagari, 182 USPQ 549.

Stanforth '133 does not specifically teach "incubating" the soil after adding the various additives. Ruby et al., however, teach that soils treated with phosphate (in the form of phosphoric acid) are incubated for various time periods ranging between 70 days and 18 months

before testing. One test sample is incubated at 55°C for one year before testing. It is thus known in the art that the treatment of soil with phosphates to reduce the bioavailability of lead requires an incubation period of the soil in order to react with the phosphate and from pyromorphite complexes. Therefore, it would have been obvious to one of ordinary skill at the time of invention to provide an incubation period for the phosphate treated soil of Stanforth to react before testing the bioavailability of lead in the treated soil.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

PL

STUART L. HENDRICKSON
PRIMARY EXAMINER